- ## Introduction of sheet: -

This sheet contains some Python problems that contain important problems that are taken from the doctor's assistant. They are most recommended to come to the final exam. So Good Luck ☺ .

- ## How to solve problems: -

I want to send the answer to problems, but I prefer that everyone solves it on his/her own because each of us has his/her style in solving problems.

When you solve the problem check that your answer is correct by comparing the input and output.

- ## The problem: -

(Note: - some questions have two ways to solve like: - in converting binary to decimal or anything else)

1-a program that takes two numbers and prints if the sum of the two numbers is even or odd
Input: - 4, 4 ==➔ the sum is even
5, 4 ==➔ the sum is odd

2- program the sum of (n) num of number
Input: - 2, 5, 4 ==➔ 9

3- print all numbers from low (that is taken from the user) to high (that is taken from the user) power 2
input: - 1, 4 ==➔ 1^2 = 1
2^2 = 4
3^2 = 9
4^2 = 16

4-Read an integer between 0 –999 and add all the digits in the integer. For example: if an integer is 932, the sum of all its digits is 14.

5-Find a character in a word given a character and string print the positions of this character.
Input: - good morning, r ==➔ 8

6-Given a word, a character to replace (c), and a new character (new_c). You must replace each character (c) with character (new_c) in the given word.
Input: - Blah Ba Blah, B, C ==➔ Clah Ca Clah

7- Get the factorial of a number
Input: - 5 ==➔ 5*4*3*2*1=120

8- display the Fibonacci sequence up to N-TH term 0, 1, 1, 2, 3, 5, 8...
Note: - The 1st two terms in the Fibonacci series are always 0 □1 after that the next term will be the sum of the previous two terms:
Input: - 7 ==➔ 0,1,1,2,3,5,8

9 -take two numbers from the user one for the base and the other for the power and print the result
Input: - 5, 5 ==➔ 3125

10- take two numbers from the user and arrange them in ascending order until the user enters 0 0
Input: - 2 3 ==➔ 2 3
3 2 ==➔ 2 3
50 32 ==➔ 32 50
0 0 ==➔ EXIT

11- take the number of people from the user and the number of apples and print the remaining number of apples after a fair distribution
Input: - 10, 100 ==➔ 0
14, 3 ==➔ 2

12- write a program that takes time in seconds and past it in the state of h: min: sec
Input: - 46979 ==➔ 13: 2: 59

13- enter a program that checks the number: (taking code from an assignment is not allowed for people who didn't write the code before as)

A) Binary

B) Decimal

C) Octal

D) Hexadecimal

Where the program doesn't end until the number is correct that the user enters. (Note: each base is alone in a program and then makes only one code that checks according to what the user wants to check (only one function repeating code not allowed))

14- change the binary number to one's complement (taking code from assignment is not allowed for people who didn't write the code before as)

15- change the binary number to two's complement (taking code from assignment is not allowed for people who didn't write the code before as)

16-make addition of two binary without converting to decimal then sum and return it to binary

17- make a substruction of two binaries without using converting to decimal then subtract then return it to binary

18-change number from base to base: -

A) Binary to (decimal, octal, hexadecimal)
B) Decimal to (binary, octal, hexadecimal)
C) Octal to (binary, decimal, hexadecimal)
D) Hexadecimal to (binary, decimal, hexadecimal)

Note: - you can use a function composed of two converting functions

19-Write an algorithm to determine the flying time between two cities given the distance between them by kilometer and the average speed of the airplane.
Input: 250, 50 ==➔ 5 hours

20-Write a program that asks the user to enter a starting num, ending num, and the word "even" or "odd". If the user enters “even”, then the program should generate all even numbers between the start and end. Otherwise, if the user enters “odd”, then the program should generate all odd numbers between the start and end.

21- write a program that takes three numbers from the user first is the low number, the second is the divisor, and the third is the top number then print the number between the first and third one that is divisible by the divisor.

Good luck
for all☺